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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,269	04/10/2000	Kensaku Abe	6640/59442	1633

7590 03/26/2003

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EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 03/26/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/529,269

Applicant(s)

ABE ET AL.

Examiner

Lun-See Lao

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-15 of U.S. application 09/529,269 filed on 05-25-2000 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5 and 9-12, are rejected under 35 U.S.C. 102(b) as being anticipated by Andrea (US PAT. 5,251,263)

Consider claims 1 and 3 Andrea teaches an acoustic apparatus comprising:
a headphone section mounted on a user head (see fig. 10),
having a microphone element (60', 70') for detecting sound around the user and a signal acoustic transducing element (50) functioning as a sound source for canceling the sound around the user, housed in a headphone box, with a first output terminal for outputting a microphone audio signal (60', 70') collected by the microphone element and a first input terminal for inputting a cancel audio signal supplied to the signal acoustic transducing element (50) (see col.3 line 25-col.4 line 55); and
a control circuit section (see fig.11, 100) independent from the headphone

section, with a second input terminal connected to the first output terminal and a second output terminal connected to the first input terminal, and controlling at least frequency characteristics and gain characteristics of the microphone audio signal from the microphone element of the headphone section input through the second input terminal, to generate the cancel audio signal for canceling the sound around the user, and supplying the cancel audio signal to the signal acoustic transducing element of the headphone section through the second output terminal (see col.5 line 25-col.6 line 60); and the control circuit section further comprises: means for adding different audio signals (from feedback sensors) cancellation to the cancel audio signal using a signal audio converter element as a sound source for canceling the sound around the user (see col.5 line 25-col.6 line 45).

Consider claim 5 Andrea teaches an acoustic apparatus comprising:
a headphone section (see fig.10) mounted on a user head, having a microphone element (60', 70') for detecting sound around the user and a signal acoustic transducing element functioning as a sound source for canceling the sound around the users housed in a headphone box, with a first output terminal with an adjusting section for adjusting an output of a microphone audio signal collected by the microphone element and a first input terminal for inputting a cancel audio signal supplied to the signal acoustic transducing element (see col.6 line 45-col.8 line 30), and

a control circuit section (see fig.11, 100) independent from the headphone section, with a second input terminal connected to the first output terminal and a second output terminal connected to the first input terminal, and controlling at least frequency

Art Unit: 2643

characteristics and gain characteristics of the microphone audio signal from the microphone element (fig.10, (60', 70')) of the headphone section input through the second input terminal, to generate the cancel audio signal that can serve as a sound source for canceling the sound around the user, and supplying the cancel audio signal to the signal acoustic transducing element of the headphone section through the second output terminal (see col.8 line 35-col.9 line 65).

Consider claim 9 Andrea teaches an acoustic apparatus comprising:

a headphone section mounted on a user head (see fig.10), having a microphone element (70', 60') for detecting sound around the user and a signal acoustic transducing element (50) functioning as a sound source for canceling the sound around the user housed in a headphone box, with a first output terminal for outputting a microphone audio signal collected by the microphone element and a first input terminal for inputting a cancel audio signal supplied to the signal acoustic transducing element (50) (see col.3 line 25-col.4 line 55); and a

control circuit section (see fig.11, 100) independent from the headphone section (fig.10), with a second input terminal connected to the first output terminal and a second output terminal connected to the first input terminal, and controlling at least frequency characteristics and gain characteristics of the microphone audio signal from the microphone element of the headphone section input through the second input terminal, with said frequency characteristics and gain characteristics being adjusted to achieve a predetermined level at a predetermined frequency between 50 Hz and 1.5 kHz, to

Art Unit: 2643

generate the cancel audio signal that can cancel the sound around the user, and supplying the cancel audio signal to the signal acoustic transducing element of the headphone section through the second output terminal (see col.8 line 35-col.9 line 65).

Consider claim 10 Andrea teaches an acoustic apparatus comprising:

a headphone section mounted on a user head (see fig.10), having a microphone element (60', 70') for detecting sound around the user and a signal acoustic transducing element (50) functioning as a sound source for canceling the sound around the user housed in a headphone box, with a first output terminal for outputting a microphone audio signal collected by the microphone element and a first input terminal for inputting a cancel audio signal supplied to the signal acoustic transducing element (50) (see col.3 line 25-col.4 line 55);

a control circuit section (see fig. 11,100) independent from the headphone section, equipped with a second input terminal connected to the first output terminal and a second output terminal connected to the first input terminal, and controlling at least [the] frequency characteristics and gain characteristics of the microphone audio signal from the microphone element of the headphone section input through the second input terminal, to generate the cancel audio signal for canceling the sound around the user, and supplying the cancel audio signal to the signal acoustic transducing element (50) of the headphone section through the second output terminal (see col.8 line 35-col.9 line 65); and

a circuit (see fig.9) configuration for canceling the surrounding sound used by the control circuit section that is of a feed-forward system (see col.14 line 45-col.15 line 15).

Consider claim 11 Andrea teaches an acoustic apparatus comprising:

a headphone section (see fig.10) mounted on a user head, having a microphone element (6', 70') for detecting sound around the user and a signal acoustic transducing element (50) functioning as a sound source for canceling the sound around the user housed in a headphone box, with a first output terminal for outputting a microphone audio signal collected by the microphone element and a first input terminal for inputting a cancel audio signal supplied to the signal acoustic transducing element (50) (see col.3 line 25-col.4 line 55),

a control circuit (see fig.11, 100) section independent from the headphone section, with a second input terminal connected to the first output terminal and a second output terminal connected to the first input terminal, and controlling at least frequency characteristics and gain characteristics of the microphone audio signal from the microphone element of the headphone section input through the second input terminal, to generate the cancel audio signal for canceling the sound around the user, and supplying the cancel audio signal to the signal acoustic transducing element (50) of the headphone section through the second terminal (see col.8 line 35-col.9 line 65); and

a circuit (see fig.5 and 6) configuration for canceling the sound surrounding the user used by the control circuit section that is of a feedback system (see col.7 line 5- col.8 line 65).

Art Unit: 2643

Consider claim 12 Andrea teaches a headphone comprising:

a box for housing (see fig.4) a microphone element (60,70) for detecting sound around a user and a signal acoustic transducing element (50) functioning as a sound source for canceling the sound around the user,

an output terminal for a microphone audio signal whose sound is collected by the microphone element, and an input terminal for a cancel audio signal supplied to the signal acoustic transducing element (50 and see col.6 line 30-col 7 line 35).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Todter (US PAT. 5,937,070).

Consider claim 13 Todter teaches a headphone comprising:

a box for housing a microphone element (see fig.1, 4) for detecting sound around a user, a signal acoustic transducing element (3) functioning as a sound source for canceling the sound around the user, and an adjusting section for adjusting a cancel amount of the sound around the user; and an output terminal for a microphone audio signal whose sound is collected by the microphone element, and an input terminal for a

Art Unit: 2643

cancel audio signal supplied to the signal acoustic transducing element (see col.11 line 10 –col.12 line 65).

Consider claims 14-15 Todter teaches that the headphone of the adjusting section (see fig.6) comprises means for adjusting gains to the microphone audio signal from the microphone element; and the adjusting section comprises means for adjusting gains to the cancel audio signal input to the signal acoustic transducing element (see col.13 line 5-60).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrea (US PAT. 5,251,263) in view of Kameo (JP 62-013199).

Consider claim 2 Andrea fails to teach that the acoustic apparatus of the control circuit section further comprises recording means for recording the microphone audio signal from the microphone element.

However Kameo teaches that the acoustic apparatus of the control circuit section further comprises recording means for recording the microphone audio signal from the microphone element (see abstract).

Therefore, It would have obvious to one of ordinary skill in the art the time the invention was made, to combine the teaching of Andrea and Kameo to provide a record system for friendly to use.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrea (US PAT. 5,251,263) in view of Sasaki (JP-05-333872).

Consider claim 4 Andrea fails to teach that the acoustic apparatus of the control circuit section further comprises:

means for adding different audio signals to the cancel audio signal using a signal audio converter element as a sound source for canceling the sound around the user; and a remote control configured to supply remote-control signals for remotely controlling output of the different audio signals from an output device of the different audio signals.

However, Sasaki teaches that the acoustic apparatus of the control circuit section further comprises:

means for adding different audio signals (residual noise form (fig.1, (41)) to the cancel audio signal using a signal audio converter element as a sound source for canceling the sound around the user; and

a remote control configured (see fig.1) to supply remote-control signals for remotely controlling output of the different audio signals from an output device of the different audio signals (see constitution).

Therefore, It would have obvious to one of ordinary skill in the art the time the invention was made, to combine the teaching of Andrea and Sasaki to achieve a noise reducing device for user easily to carry the control system.

8. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrea (US PAT. 5,251,263) in view of Trompler (US PAT. 4,928,311).

Consider claim 6, Andrea fails to teach that the acoustic apparatus of an amplifier section is included in the headphone box behind the adjusting section for amplifying the microphone audio signal from the microphone element and for adjusting the microphone audio signal from the microphone element, where gains are controlled by amplifying the microphone audio signal.

However, Tromple teaches that the acoustic apparatus of an amplifier section is included in the headphone box behind the adjusting section (see fig.1 (44)) for amplifying the microphone (40) audio signal from the microphone element and for adjusting the microphone audio signal from the microphone element (40), where gains are controlled by amplifying the microphone audio signal (see col.2 line 35-50).

Therefore, It would have obvious to one of ordinary skill in the art the time the invention was made, to combine the teaching of Andrea and Trompleri to achieve an noise reducing device for reducing the cost and the size of the unit and to be used more widely in cost sensitive and space sensitive environments.

Art Unit: 2643

Consider claims 7-8 Trompler teaches that the acoustic apparatus of an amplifier section for cancel audio signals serving as a sound source for canceling the sound around the user and adjusting means (see fig.1, (44)) for adjusting an output level of the amplifier section are provided in the headphone box, and gains of the cancel audio signal input to the signal acoustic transducing element (36) are controlled (see col.2 line 30-col.3 line 60); and an adjusting section adjusts (see fig.2, (72,76)) the microphone audio signal from the microphone element that serves as a sound source for canceling the sound around the user and adjusts the microphone audio signal from the microphone element in the headphone box, said adjusting means (see fig.1,(44)) having operating means which the user is able to operate from the outside the headphone box, and an amplifier section for amplifying the microphone audio signal adjusted at the adjusting section (see col.2 line 45-col.3 line 65).

Conclusion

9. The prior art made of record and not relied upon is considered to applicant's disclosure. Gytoku (JP 5-333873) is recited to show other related the audio device and headphone.

10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:(703) 872-9314

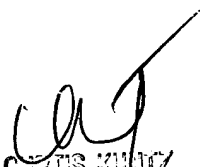
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See
Patent Examiner
US Patent and Trademark Office
Crystal Park 2
(703) 305-2259


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600